Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claims 29, 31, 43 and 45-48, amend claims 24-28, 30, 32-42 and 44, and add new claims 49-94 as follows:

Listing of Claims:

Claims 1-23 (Canceled)

24. (Currently Amended) A hybrid reactor for anaerobic waste water treatment, ~~combining the UASB (Upflow Anearobic Sludge Blanket) Process, making use of microorganism pellets, and the fixed bed immobilization of microorganisms and~~ comprising ~~the following features~~:

~~(a)~~ a plurality of porous carrier elements occupying ~~for~~ at least part of the height of the hybrid reactor;

~~(b)~~ a space in a lower portion of the hybrid reactor between the lower confines thereof and the carrier elements~~, in the form of a space for degradation of waste water contamination by microorganism pellets~~;

~~(c)~~ an upper portion of the hybrid reactor between the upper confines thereof and the carrier elements;

~~(d)~~ a supply line for waste water to be treated and to be introduced into the hybrid reactor for the first time;

~~(e)~~ a discharge system for ~~finally~~ discharging treated waste water from the hybrid reactor,

~~and further comprising the following features:~~

~~(f)~~ a central flow channel extending from the top of the hybrid reactor in downward direction from ~~and terminating at the top with~~ a first distance from the upper confines of the reactor to ~~and terminating at the bottom with~~ a second distance from the lower confines of the reactor ~~confines~~;

~~(g) the carrier elements positioned in~~ ~~the~~ a ~~annular~~ space between the central flow channel and a wall of the hybrid reactor in which the carrier elements are positioned, the

space extending ~~wall~~ for at least ~~the entire height of the flow channel or for~~ part of the height of the flow channel ~~for immobilizing microorganisms~~, the carrier elements forming ~~in the form of~~ a structured, ordered fixed bed~~, are in the form of carrier elements that are porous~~ to permit flow therethrough, the carrier elements being ~~and are~~ arranged with flow passages ~~of a width within a~~ having a predetermined width range between adjacent carrier elements;

~~(h)~~ a separator system located in the upper portion of the hybrid reactor below the discharge system, the separator system being structured ~~serving~~ to retain microorganisms floating in the waste water in the hybrid reactor and to separate water passed between the carrier elements into a first partial flow flowing into the central flow channel at the top end of the hybrid reactor, and a branched-off second partial flow~~is provided in said upper portion of the hybrid reactor below said discharge system~~;

~~(i) with respect to the internal flow thereof, is in the form of a loop-type column reactor such that waste water contained therein, inclusive of microorganism pellets, can be circulated through the central flow channel, then through space in said lower portion, then along the carrier elements in upward direction and finally again into the central flow channel~~.

the hybrid reactor being structured to allow the waste water flow in the hybrid reactor in a loop through the central flow channel in downward direction, then through the space in the lower portion, then along the carrier elements in upward direction, and finally again into the central flow channel; and

a recirculation system structured to withdraw water from the second partial flow and recirculate the withdrawn water into the waste water loop flow, the recirculation system including a withdrawal member positioned above a portion of the separator system and at a lower level of the discharge system.

25. (Currently Amended) The hybrid reactor of claim 24, wherein the carrier elements comprise plate-shaped carrier elements ~~are provided~~.

26. (Currently Amended) The hybrid reactor of claim 25, wherein a plurality of packages of the carrier elements are distributed across the circumference of the hybrid reactor, with the plate-shaped carrier elements within each package being arranged parallel to each other and in tangential direction of the hybrid reactor.

27. (Currently Amended) The hybrid reactor of claim 24, wherein the flow passages between adjacent carrier elements each have a width of 3 to 6 cm~~, preferably 3.5 to. 5.5 cm, each~~.

28. (Currently Amended) The hybrid reactor of claim 24, wherein the carrier elements ~~are provided that consist~~ comprise carrier elements substantially of plastics particles and expanded clay particles that are unified with each other.

29. (Cancelled)

30. (Currently Amended) The hybrid reactor of claim 24~~29~~, wherein the withdrawal ~~system~~ member of the recirculation system comprises an intermediate space between two plate-like elements as well as a conduit starting in ~~said~~ the intermediate space.

31. (Cancelled)

32. (Currently Amended) The hybrid reactor of claim 24, wherein the separator system comprises a partition provided in spaced apart manner above the upper end of the central flow channel and covering a ~~large~~ major part of the reactor cross-sectional area while leaving free an outer annular area.

33. (Currently Amended) The hybrid reactor of claim 32, wherein the partition ~~has~~ comprises partition portions ~~in which it does not~~ extending in a direction other than horizontally and forms a gas collection space in a highest portion.

34. (Currently Amended) The hybrid reactor of claim 33, wherein, from the highest portion, the partition extends ~~roughly speaking~~ outwardly in downwardly inclined manner and inwardly in downwardly inclined manner.

35. (Currently Amended) The hybrid reactor of claim 32, wherein ~~a~~ the withdrawal ~~system~~ member of the recirculation system is positioned at the upper side of the partition.

36. (Currently Amended) The hybrid reactor of claim 24, ~~wherein~~ further comprising a first discharge line for gas formed in the hybrid reactor ~~starts~~ and structured to remove gas in the upper portion of the hybrid reactor.

37. (Currently Amended) The hybrid reactor of claim 32, ~~wherein~~ further comprising a second discharge line for gas formed in the hybrid reactor ~~starts~~ in the region of the partition.

38. (Currently Amended) The hybrid reactor of claim 24, wherein the carrier plates are positioned in 15 to 40 %~~, preferably 20 to 30 %,~~ of the reactor volume.

39. (Currently Amended) The hybrid reactor of claim 24, further comprising a flow hindrance positioned on the wall of the ~~wherein said~~ lower portion of the hybrid reactor ~~has a flow hindrance positioned on the wall thereof~~.

40. (Currently Amended) The hybrid reactor of claim 24, ~~wherein~~ further comprising at least one driving jet outlet terminating below the lower end of the central flow channel ~~is provided~~.

41. (Currently Amended) The hybrid reactor of claim 24, further comprising immobilized microorganisms and microorganism pellets, the microorganisms in the pellets being different from the immobilized microorganisms. ~~wherein it is designed such that different kinds of microorganisms are provided as immobilized microorganisms on the one hand and as microorganisms of the microorganism pellets on the other hand.~~

42. (Currently Amended) A process for anaerobic waste water treatment in a hybrid reactor combining ~~the UASB (Upflow Anearobic Sludge Blanket) Process, making use of~~

using microorganism pellets~~, and the~~ and fixed-bed immobilization of microorganisms, in which the waste water to be treated circulates in the hybrid reactor~~, such that waste water inclusive of microorganism pellets~~, the process comprising:

~~(a) flows~~ directing a mixture of the waste water and the microorganism pellets through a space in the lower portion of the hybrid reactor;

~~(b) then~~ directing the mixture of the waste water and the microorganism pellets upwardly~~,~~ in a space of the hybrid reactor ~~located thereabove~~,

~~flows along~~ immobilizing microorganisms in the mixture of the waste water and the microorganism pellets using ~~that are immobilized in the form of~~ a structured, ordered fixed bed on carrier elements that are porous to permit flow therethrough and form flow passages between each other;

~~(c) then flows~~ then directing the mixture of the waste water and the microorganism pellets to a separator system serving to retain microorganisms floating in the waste water in the hybrid reactor and separating the waste water into a first partial flow ~~poorer in microorganisms floating in the waste water~~, and a second partial flow ~~richer in microorganisms floating in the waste water~~;

~~(d) and finally, in~~directing the ~~second~~ first partial flow~~, flows~~ centrally in the hybrid reactor from the top in a downward direction back into the space in the lower portion of the hybrid reactor; and

recirculating at least part of the waste water in the second partial flow into the waste water flow in the hybrid reactor.

43. (Cancelled).

44. (Currently Amended) The process of claim 42, further comprising ~~wherein different kinds of microorganisms are provided as immobilized~~ immobilizing microorganisms in the mixture of the waste water and the microorganism pellets~~on the one hand and as microorganisms of the microorganism pellets on the other hand~~.

45-48. (Cancelled)

49. (New) A hybrid reactor for anaerobic waste water treatment, comprising:

a plurality of porous carrier elements occupying at least part of the height of the hybrid reactor;

a space in a lower portion of the hybrid reactor between the lower confines thereof and the carrier elements;

an upper portion of the hybrid reactor between the upper confines thereof and the carrier elements;

a supply line for waste water to be treated and to be introduced into the hybrid reactor for the first time;

a discharge system for discharging treated waste water from the hybrid reactor,

a central flow channel extending from the top of the hybrid reactor in downward direction from a first distance from the upper confines of the reactor to a second distance from the lower reactor;

the hybrid reactor being structured to allow the waste water flow in the hybrid reactor in a loop through the central flow channel in downward direction, then through the space in the lower portion, then along the carrier elements in upward direction, and finally again into the central flow channel;

a space between the central flow channel and a wall of the hybrid reactor in which the carrier elements are positioned, the space extending for at least part of the height of the flow channel, the carrier elements forming a structured, ordered fixed bed to permit flow therethrough, the carrier elements being arranged with flow passages each having a predetermined width range between adjacent carrier elements of 3 to 6 cm; and

a separator system located in the upper portion of the hybrid reactor below the discharge system, the separator system being structured to retain microorganisms floating in the waste water in the hybrid reactor.

50. (New) The hybrid reactor of claim 49 wherein the carrier elements comprise plate-shaped carrier elements.

51. (New) The hybrid reactor of claim 49 wherein the carrier elements comprise carrier elements substantially of plastics particles and expanded clay particles that are unified with each other.

52. (New) The hybrid reactor of claim 49 wherein the separator system comprises a partition provided in spaced apart manner above the upper end of the central flow channel and covering a major part of the reactor cross-sectional area while leaving free an outer annular area.

53. (New) The hybrid reactor of claim 49, further comprising a first discharge line for gas formed in the hybrid reactor and structured to remove the gas in the upper portion of the hybrid reactor.

54. (New) The hybrid reactor of claim 49, further comprising a flow hindrance positioned on the wall of the lower portion of the hybrid reactor.

55. (New) The hybrid reactor of claim 49, further comprising at least one driving jet outlet terminating below the lower end of the central flow channel.

56. (New) The hybrid reactor of claim 49, further comprising immobilized microorganisms and microorganism pellets, the microorganisms in the pellets being different from the immobilized microorganisms.

57. (New) A hybrid reactor for anaerobic waste water treatment, comprising:

a plurality of porous carrier elements occupying at least part of the height of the hybrid reactor, the carrier elements comprising carrier elements substantially of plastics particles and expanded clay particles that are unified with each other;

a space in a lower portion of the hybrid reactor between the lower confines thereof and the carrier elements;

an upper portion of the hybrid reactor between the upper confines thereof and the carrier elements;

a supply line for waste water to be treated and to be introduced into the hybrid reactor for the first time;

a discharge system for discharging treated waste water from the hybrid reactor,

a central flow channel extending from the top of the hybrid reactor in downward direction from a first distance from the upper confines of the reactor to a second distance from the lower reactor;

the hybrid reactor being structured to allow the waste water flow in the hybrid reactor in a loop through the central flow channel in downward direction, then through the space in the lower portion, then along the carrier elements in upward direction, and finally again into the central flow channel;

a space between the central flow channel and a wall of the hybrid reactor in which the carrier elements are positioned, the space extending for at least part of the height of the flow channel, the carrier elements forming a structured, ordered fixed bed to permit flow therethrough, the carrier elements being arranged with flow passages having a predetermined width range between adjacent carrier elements; and

a separator system located in the upper portion of the hybrid reactor below the discharge system, the separator system being structured to retain microorganisms floating in the waste water in the hybrid reactor.

58. (New) The hybrid reactor of claim 57 wherein the carrier elements comprise plate-shaped carrier elements.

59. (New) The hybrid reactor of claim 57 wherein a plurality of packages of the carrier elements are distributed across the circumference of the hybrid reactor, with the plate-shaped carrier elements within each package being arranged parallel to each other and in tangential direction of the hybrid reactor.

60. (New) The hybrid reactor of claim 57 wherein the flow passages between adjacent carrier elements each have a width of between 3 and 6 cm.

61. (New) The hybrid reactor of claim 57 wherein the separator system comprises a partition provided in spaced apart manner above the upper end of the central flow channel and covering a major part of the reactor cross-sectional area while leaving free an outer annular area.

62. (New) The hybrid reactor of claim 57, further comprising a first discharge line for gas formed in the hybrid reactor and structured to remove the gas in the upper portion of the hybrid reactor.

63. (New) The hybrid reactor of claim 57 wherein the carrier plates are positioned in 15 to 40 % of the reactor volume.

64. (New) The hybrid reactor of claim 57, further comprising a flow hindrance positioned on the wall of the lower portion of the hybrid reactor.

65. (New) The hybrid reactor of claim 57, further comprising at least one driving jet outlet terminating below the lower end of the central flow channel.

66. (New) The hybrid reactor of claim 57, further comprising immobilized microorganisms and microorganism pellets, the microorganisms in the pellets being different from the immobilized microorganisms.

67. (New) A hybrid reactor for anaerobic waste water treatment, comprising:

a plurality of porous carrier elements occupying at least part of the height of the hybrid reactor;

a space in a lower portion of the hybrid reactor between the lower confines thereof and the carrier elements;

an upper portion of the hybrid reactor between the upper confines thereof and the carrier elements;

a supply line for waste water to be treated and to be introduced into the hybrid reactor for the first time;

a discharge system for discharging treated waste water from the hybrid reactor,

a central flow channel extending from the top of the hybrid reactor in downward direction from a first distance from the upper confines of the reactor to a second distance from the lower reactor;

the hybrid reactor being structured to allow the waste water flow in the hybrid reactor in a loop through the central flow channel in downward direction, then through the space in the lower portion, then along the carrier elements in upward direction, and finally again into the central flow channel;

a space between the central flow channel and a wall of the hybrid reactor in which the carrier elements are positioned, the space extending for at least part of the height of the flow channel, the carrier elements forming a structured, ordered fixed bed to permit flow therethrough, the carrier elements being arranged with flow passages having a predetermined width range between adjacent carrier elements;

a separator system located in the upper portion of the hybrid reactor below the discharge system, the separator system being structured to retain microorganisms floating in the waste water in the hybrid reactor; and

a flow hindrance positioned on the wall of the lower portion of the hybrid reactor.

68. (New) The hybrid reactor of claim 67 wherein the carrier elements comprise plate-shaped carrier elements.

69. (New) The hybrid reactor of claim 67 wherein the flow passages between adjacent carrier elements each have a width of between 3 and 6 cm.

70. (New) The hybrid reactor of claim 67 wherein the carrier elements comprise carrier elements substantially of plastics particles and expanded clay particles that are unified with each other.

71. (New) The hybrid reactor of claim 67 wherein the withdrawal member comprises an intermediate space between two plate-like elements as well as a conduit starting in the intermediate space.

72. (New) The hybrid reactor of claim 67 wherein the separator system comprises a partition provided in spaced apart manner above the upper end of the central flow channel and covering a major part of the reactor cross-sectional area while leaving free an outer annular area.

73. (New) The hybrid reactor of claim 67, further comprising a first discharge line for gas formed in the hybrid reactor and structured to remove the gas in the upper portion of the hybrid reactor.

74. (New) The hybrid reactor of claim 67 wherein the carrier plates are positioned in 15 to 40 % of the reactor volume.

75. (New) The hybrid reactor of claim 67 further comprising at least one driving jet outlet terminating below the lower end of the central flow channel.

76 (New) The hybrid reactor of claim 67, further comprising immobilized microorganisms and microorganism pellets, the microorganisms in the pellets being different from the immobilized microorganisms.

77. (New) A hybrid reactor for anaerobic waste water treatment, comprising:

a plurality of carrier elements occupying at least part of the height of the hybrid reactor;

a space in a lower portion of the hybrid reactor between the lower confines thereof and the carrier elements;

an upper portion of the hybrid reactor between the upper confines thereof and the carrier elements;

a supply line for waste water to be treated and to be introduced into the hybrid reactor for the first time;

a discharge system for discharging treated waste water from the hybrid reactor,

a central flow channel extending from the top of the hybrid reactor in downward direction from a first distance from the upper confines of the reactor to a second distance from the lower reactor;

the hybrid reactor being structured to allow the waste water flow in the hybrid reactor in a loop through the central flow channel in downward direction, then through the space in the lower portion, then along the carrier elements in upward direction, and finally again into the central flow channel;

a space between the central flow channel and a wall of the hybrid reactor in which the carrier elements are positioned, the space extending for at least part of the height of the flow channel, the carrier elements forming a structured, ordered fixed bed to permit flow therethrough, the carrier elements being arranged with flow passages having a predetermined width range between adjacent carrier elements;

a separator system located in the upper portion of the hybrid reactor below the discharge system, the separator system being structured to retain microorganisms floating in the waste water in the hybrid reactor; and

a plurality of different kinds of microorganisms in the form of immobilized microorganisms and microorganism pellets, the microorganisms in the pellets being different from the immobilized microorganisms.

78. (New) The hybrid reactor of claim 77 wherein the carrier elements comprise plate-shaped carrier elements.

79. (New) The hybrid reactor of claim 77 wherein the flow passages between adjacent carrier elements each have a width of between 3 and 6 cm.

80. (New) The hybrid reactor of claim 77 wherein the carrier elements comprise carrier elements substantially of plastics particles and expanded clay particles that are unified with each other.

81. (New) The hybrid reactor of claim 77 wherein the withdrawal member comprises an intermediate space between two plate-like elements as well as a conduit starting in the intermediate space.

82. (New) The hybrid reactor of claim 77 wherein the separator system comprises a partition provided in spaced apart manner above the upper end of the central flow channel and covering a major part of the reactor cross-sectional area while leaving free an outer annular area.

83. (New) The hybrid reactor of claim 77, further comprising a first discharge line for gas formed in the hybrid reactor and structured to remove the gas in the upper portion of the hybrid reactor.

84. (New) The hybrid reactor of claim 77 wherein the carrier plates are positioned in 15 to 40 % of the reactor volume.

85. (New) The hybrid reactor of claim 77, further comprising a flow hindrance positioned on the wall of the lower portion of the hybrid reactor.

86. (New) The hybrid reactor of claim 77, further comprising at least one driving jet outlet terminating below the lower end of the central flow channel.

87. (New) A hybrid reactor for anaerobic waste water treatment, comprising:

a plurality of microorganism pellets;

a plurality of carrier elements occupying at least part of the height of the hybrid reactor for immobilizing microorganisms;

a space in a lower portion of the hybrid reactor between the lower confines thereof and the carrier elements to contain the plurality of microorganism pellets for degradation of waste water contamination by the microorganism pellets;

an upper portion of the hybrid reactor between the upper confines thereof and the carrier elements;

a supply line for waste water to be treated and to be introduced into the hybrid reactor;

a discharge system for discharging treated waste water from the hybrid reactor,

a central flow channel extending from the top of the hybrid reactor in downward direction from a first distance from the upper confines of the reactor to a second distance from the lower confines of the reactor;

the hybrid reactor being structured to allow the waste water flow in the hybrid reactor in a loop through the central flow channel in downward direction, then through the space in the lower portion, then along the carrier elements in upward direction, and finally again into the central flow channel;

the carrier elements positioned in an annular space between the central flow channel and a wall of the hybrid reactor for at least part of the height of the flow channel for immobilizing microorganisms, the carrier elements comprising a structured, ordered fixed porous bed to permit flow therethrough, the carrier elements being arranged with flow passages having a predetermined width range between adjacent carrier elements;

a separator system located in the upper portion of the hybrid reactor below the discharge system to retain the microorganisms floating in the waste water in the hybrid reactor;

the waste water inclusive of the microorganism pellets flowing in the hybrid reactor in a loop through the central flow channel in downward direction, then through the space in the lower portion, then along the carrier elements in upward direction and finally again into the central flow channel; and

a recirculation system structured to withdraw water from the second partial flow and recirculate the withdrawn water into the waste water loop flow, the recirculation system including a withdrawal member positioned above a portion of the separator system and at a lower level of the discharge system.

88. (New) The hybrid reactor of claim 87 wherein the carrier elements comprise plate-shaped carrier elements.

89. (New) The hybrid reactor of claim 87 wherein the flow passages between adjacent carrier elements each have a width of 3 to 6 cm.

90. (New) The hybrid reactor of claim 87 wherein the carrier elements comprise carrier elements substantially of plastics particles and expanded clay particles that are unified with each other.

91. (New) The hybrid reactor of claim 87 wherein the separator system comprises a partition provided in spaced apart manner above the upper end of the central flow channel and covering a major part of the reactor cross-sectional area while leaving free an outer annular area.

92. (New) The hybrid reactor of claim 87, further comprising a first discharge line for gas formed in the hybrid reactor and structured to remove gas in the upper portion of the hybrid reactor.

93. (New) The hybrid reactor of claim 87 wherein the carrier plates are positioned in 15 to 40 % of the reactor volume.

94. (New) The hybrid reactor of claim 87, further comprising a flow hindrance positioned on the wall of the lower portion of the hybrid reactor.